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19. *NICOTIANA GLAUCA* GRAHAM—A TREE TOBACCO IN MAHARASHTRA

In January 1971 I was informed that there are some plants called in Marathi as 'Mahapurusha' or 'Mahasatpurusha' growing at Kundlapur (Sangli district) whose leaves when chewed produce a sort of hallucination or trance effect and are often used locally for various pulmonary disorders. Subsequently, I visited the locality to collect flowering and fruiting specimens and found that the species belonged to the genus *Nicotiana*. The species identification could not be confirmed since the characters did not tally with any of the four species of *Nicotiana* found under cultivation or as exotics in India (Haines 1922 ; Patel 1960). Some of the herbarium specimens along with my notes were sent to Royal Botanical Gardens, Kew, England, where they have been identified as belonging to *Nicotiana glauca* Graham.

The species has so far been collected by me from Kundlapur and Jarandi of Kavathe Mahankal Taluka of Sangli District. The plants grow wild about these villages. They do not however form a part of the natural vegetation. Inquiry with the local people revealed that the plants have grown in the area for the last 35-40 years though their importance has been realized only quite recently.

Nicotiana glauca belongs to the subgenus *Rustica*, section *Paniculatae* and occurs in Argentina, Mexico and parts of North America (Goodspeed 1954). Its occurrence in India has not been reported so far and hence a brief description of the species and a key to separating it from other species of *Nicotiana* found in India has been given below.

Nicotiana glauca Graham. A perennial shrub reaching 3 m height. Leaves alternate, petiole 2·5-3·5 cm long, lamina 7-4·5 cm long, 3·5-2·3 cm broad in the middle, margin entire, acute-acuminate, main nerves 6-10 pairs ; lower leaves much larger. Inflorescence terminal

paniculate raceme. Flowers bracteate, bract about 1 mm long, hairy ; pedicel 7-7·5 mm long ; calyx (1 × 0·4 cm) tubular, 5-lobed, lobes about 3 mm long, acute, margin ciliate ; corolla greenish-white, villose, tube cylindric, 3·2-3·4 cm long, about 4 mm broad, slightly constricted at base, slightly enlarged (5 mm wide) below the lobes ; lobes 5, rounded, apiculate, erect. Stamens 5, included, inserted at about 7 mm above the base of the corolla tube, filament 2·5 cm long, cylindrical, anthers bithecous, deeply basifixed dehiscing longitudinally. Hypogynous disk prominent. Ovary superior, ovoid, 2·5 × 2·0 mm, bilocular, placentation axile, ovules numerous. Style 2·5-3 cm long, stigma slightly bilobed. Capsule 0·8-1 cm long, 0·5 cm wide in the middle, dehiscing in four halves from top, enclosed partially or completely in the calyx tube which is often split on one side. Seeds numerous, brownish-black, angular, reticulate. Flowers and fruits. February, July-August.

The species can be easily distinguished from other species in India by its shrubby habit, petiolate leaves and the floral peculiarities as follows :—

Leaves petiolate

Seasonal herbs, calyx teeth sub-obtuse, corolla tube campanulate, yellowish, lobes obtuse.....*N. rustica*

Perennial shrub, calyx teeth acute, corolla tube linear, slightly swollen above, greenish white, lobes round apiculate.....*N. glauca*

Leaves sessile

Corolla tube ventricose above, rosy.....*N. tabacum*

Corolla tube linear, white or greenish white or pale pink, lobes acute.....
.....*N. plumbaginifolia*

Corolla tube linear, slightly swollen above, white, lobes obtuse.....*N. alata*

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20. AXILLARY ARCHEGONIA IN *SPLACHNOBRYUM INDICUM* HAMP. ET C. MUELL. FROM BOMBAY

(*With eleven text-figures in a plate*)

The genus *Splachnobryum* C. Muell. belongs to the family Splachnaceae having perstomate capsule, heterogenous nerve and central strand in stem. Five species of the genus occur in India. In two of them *S. indicum* Hamp. et C. Muell. archegonia are found in a position namely axillary or super axillary. Morphologically *S. indicum* Hamp. et C. Muell. (Plate, Figs. 1-11) differs from *S. flaccidum* (Harv.) Braithw. in having erect, lingulate to spathulate leaves (Fig. 2) which are narrower towards the apex, wider at base with undulate margin which is crenulate to serrulate (Fig. 4). The nerve is broad at base and narrow at the apex ending below the leaf apex (Fig. 4). In *S. indicum* Hamp. et C. Muell. leaf cells are thin-walled, chlorophyllose, obliquely rhomboidal, 35 μ long and 16 μ broad. Leaf base cells rectangular to irregularly rectangular, 50 μ long and 20 μ broad (Fig. 5). Seta erect, 1·5 to 2 cm in height, dark brown coloured (Fig. 8), Capsule cylindrical, brownish, with narrow, pointed opercular lid (Figs. 8, 10). Peristome teeth sixteen, deeply inserted, with cleft at base, and narrowed at apex (Fig. 11). Spores brown, globose, smooth-walled, 15 to 20 μ in diameter (Fig. 11). *S. indicum* Hamp. et C. Muell. grows luxuriantly on the old walls of houses and compounds at Mumbra in Bombay. Only female plants are seen.

Careful observations, revealed that there are ten to twelve brownish, long necked, naked archegonia growing in unusual positions on the stem of the female plants. Most of them are lateral in position on stem a few in the axil of leaves and at the apex of stem (Figs. 6, 7). They are stalked (Figs. 6, 7). Well developed sporophytes are formed by them (Figs. 1, 8). Antherdial plants are not seen.

Discussion : Lateral archegonia on stem were recorded in *S. flaccidum* (Harv.) Braithw. from Delhi (Chopra & Rashid 1969). Other mosses like *Atrichum* sp. (Chopra & Bhandari 1959), *Oilgotrichum semilamellatum* and *Lyellia crispa* (Sharma & Chopra 1964), and *Fissidens* sp. also show this anacrogynous condition. In these mosses archegonia are mainly confined to the apices of shoots, but in *S. indicum*